Appendix for A Neuro-Symbolic Method for Understanding Free-text Medical Evidence

A. Evaluation of Medical Evidence Dependency Parser

Table 1 and Table 2 show detailed evaluation for Medical Evidence Dependency Parser.

	Precision	Recall	Micro-F1
Intervention	0.70	0.74	0.72
Outcome	0.72	0.79	0.75
Count	0.50	0.79	0.62
Observation	0.71	0.81	0.76
Overall	0.70	0.78	0.74

Table 1: Performance of Named Entity Recognition module for Medical Evidence Elements

	Precision	Recall	Micro-F1
Dependent	0.85	0.83	0.84
Independent	0.95	0.95	0.95
Overall	0.92	0.92	0.92

Table 2: Performance of Relation Extraction module for Medical Evidence Dependency on gold standards.

B. COVID-19 Evidence Inference data

PMCID	question	abstract	label
7245769	[O] occurrence rates of ground glass opacities [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	0
7245769	[O] occurrence rates of crazy-paving pattern [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	0
7245769	[O] occurrence rates of axial interstitial thickening [I] CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	0

7245769	[O] subjective score of overall image quality [I] CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	0
7245769	[O] subjective score of overall image quality and image noise level (SD) [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	0
7245769	[O] volume of CT dose index [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	1

7245769	[O] dose length product [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	1
7245769	[O] ED [I] Karl 3D iterative technique [C] regular CT	Result: There was no significant difference in the occurrence rates of ground glass opacities, consolidation, crazy-paving pattern, fiber cable shadow and axial interstitial thickening between the study group and control group ($p > 0.05$). In addition, no significant difference was found for the subjective score of overall image quality and image noise level (SD) between the two groups ($p > 0.05$). However, significant differences was found in CTDIvol, DLP, and ED between the study group and the control group ($p < 0.05$). The effective dose of the study group was reduced by 76% compared to the control group. Conclusion: CareDose 4D low-dose scanning combined with Karl 3D iterative reconstruction technology can not only greatly reduce the radiation dose, but also provide images that meet the diagnostic criteria of COVID-19, which can be used as a routine method for the follow-up of COVID-19 patients.	-1
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7221473	[O] probability of negative conversion by 28 days [I] hydroxychloroquine plus standard of care [C] standard of care	Results: Of 150 patients, 148 had mild to moderate disease and two had severe disease. The mean duration from symptom onset to randomisation was 16.6 (SD 10.5; range 3-41) days. A total of 109 (73%) patients (56 standard of care; 53 standard of care plus hydroxychloroquine) had negative conversion well before 28 days, and the remaining 41 (27%) patients (19 standard of care; 22 standard of care plus hydroxychloroquine) were censored as they did not reach negative conversion of virus. The probability of negative conversion by 28 days in the standard of care plus hydroxychloroquine group was 85.4% (95% confidence interval 73.8% to 93.8%), similar to that in the standard of care group (81.3%, 71.2% to 89.6%). The difference between groups was 4.1% (95% confidence interval -10.3% to 18.5%). In the safety population, adverse events were recorded in 7/80 (9%) hydroxychloroquine non-recipients and in 21/70 (30%) hydroxychloroquine recipients. The most common adverse event in the hydroxychloroquine recipients was diant was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with severe or life-threatening COVID-19, convalescent p	0
32339248	[O] Lethality until day 13 [I] high-dosage CQ [C] low-dosage CQ	Results: Out of a predefined sample size of 440 patients, 81 were enrolled (41 [50.6%] to high-dosage group and 40 [49.4%] to low-dosage group). Enrolled patients had a mean (SD) age of 51.1 (13.9) years, and most (60 [75.3%]) were men. Older age (mean [SD] age, 54.7 [13.7] years vs 47.4 [13.3] years) and more heart disease (5 of 28 [17.9%] vs 0) were seen in the high-dose group. Viral RNA was detected in 31 of 40 (77.5%) and 31 of 41 (75.6%) patients in the low-dosage and high-dosage groups, respectively. Lethality until day 13 was 39.0% in the high-dosage group (16 of 41) and 15.0% in the low-dosage group (6 of 40). The high-dosage group presented more instance of QTc interval greater than 500 milliseconds (7 of 37 [18.9%]) compared with the low-dosage group (4 of 36 [11.1%]). Respiratory secretion at day 4 was negative in only 6 of 27 patients (22.2%). Conclusions and relevance: The preliminary findings of this study suggest that the higher CQ dosage should not be recommended for critically ill patients wint was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two pa	1

7211500	[O] median time from start of study treatment to negative nasopharyngeal swab [I] 14-day combination of lopinavir 400 mg and ritonavir 100 mg every 12 h, ribavirin 400 mg every 12 h, and three doses of 8 million international units of interferon beta-1b on alternate days [C] 14 days of lopinavir 400 mg and ritonavir 100 mg every 12 h	Findings: Between Feb 10 and March 20, 2020, 127 patients were recruited; 86 were randomly assigned to the combination group and 41 were assigned to the control group. The median number of days from symptom onset to start of study treatment was 5 days (IQR 3-7). The combination group had a significantly shorter median time from start of study treatment to negative nasopharyngeal swab (7 days [IQR 5-11]) than the control group (12 days [8-15]; hazard ratio 4·37 [95% CI 1·86-10·24], p=0·0010). Adverse events included self-limited nausea and diarrhoea with no difference between the two groups. One patient in the control group discontinued lopinavir-ritonavir because of biochemical hepatitis. No patients died during the study. Interpretation: Early triple antiviral therapy was safe and superior to lopinavir-ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19. Future clinical study of a double antiviral therapy with intent was associated with a negative conversi	-1
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7118596	[O] diffusing lung capacity for carbon monoxide [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	1

7118596	[O] DLCO [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	1
7118596	[O] functional tests [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	1
7118596	[O] 6-min walk distance test [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	1
7118596	[O] Quality of life (QoL) assessments [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	1

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7118596	[O] SDS depression scores [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	0
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7118596	[O] SAS score [I] respiratory rehabilitation [C] without any rehabilitation intervention	Results: After 6 weeks of respiratory rehabilitation in the intervention group, there disclosed significant differences in FEV1(L), FVC(L), FEV1/FVC%, DLCO% and 6-min walk test. The SF-36 scores, in 8 dimensions, were statistically significant within the intervention group and between the two groups. SAS and SDS scores in the intervention group decreased after the intervention, but only anxiety had significant statistical significance within and between the two groups. Conclusions: Six-week respiratory rehabilitation can improve respiratory function, QoL and anxiety of elderly patients with COVID-19, but it has little significant improvement on depression in the elderly.	-1

7102525	[O] average anxiety score (STAI) [I] progressive muscle relaxation (PMR) technology [C] routine care and treatment	Results: The average anxiety score (STAI) before intervention was not statistically significant (P = 0.730), and the average anxiety score after intervention was statistically significant (P < 0.001). The average sleep quality score (SRSS) of the two groups before intervention was not statistically significant (P = 0.838), and it was statistically significant after intervention (P < 0.001). Conclusion: Progressive muscle relaxation as an auxiliary method can reduce anxiety and improve sleep quality in patients with COVID-19.	-1
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7190303	[O] time to clinical improvement [I] remdesivir [C] placebo infusions	Findings: Between Feb 6, 2020, and March 12, 2020, 237 patients were enrolled and randomly assigned to a treatment group (158 to remdesivir and 79 to placebo); one patient in the placebo group who withdrew after randomisation was not included in the ITT population. Remdesivir use was not associated with a difference in time to clinical improvement (hazard ratio 1·23 [95% CI 0·87-1·75]). Although not statistically significant, patients receiving remdesivir had a numerically faster time to clinical improvement than those receiving placebo among patients with symptom duration of 10 days or less (hazard ratio 1·52 [0·95-2·43]). Adverse events were reported in 102 (66%) of 155 remdesivir recipients versus 50 (64%) of 78 placebo recipients. Remdesivir was stopped early because of adverse events in 18 (12%) patients versus four (5%) patients who stopped placebo early. Interpretation: In this study of adult patients admitted to hospital for severe COVID-19, remdesivir was not associated with statistically significantnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR	0

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7190303	[O] clinical benefits [I] remdesivir [C] placebo infusions	Findings: Between Feb 6, 2020, and March 12, 2020, 237 patients were enrolled and randomly assigned to a treatment group (158 to remdesivir and 79 to placebo); one patient in the placebo group who withdrew after randomisation was not included in the ITT population. Remdesivir use was not associated with a difference in time to clinical improvement (hazard ratio 1·23 [95% CI 0·87-1·75]). Although not statistically significant, patients receiving remdesivir had a numerically faster time to clinical improvement than those receiving placebo among patients with symptom duration of 10 days or less (hazard ratio 1·52 [0·95-2·43]). Adverse events were reported in 102 (66%) of 155 remdesivir recipients versus 50 (64%) of 78 placebo recipients. Remdesivir was stopped early because of adverse events in 18 (12%) patients versus four (5%) patients who stopped placebo early. Interpretation: In this study of adult patients admitted to hospital for severe COVID-19, remdesivir was not associated with statistically significantnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR	0

7121492	[O] time to clinical improvement [I] lopinavir-ritonavir [C] standard care	Results: A total of 199 patients with laboratory-confirmed SARS-CoV-2 infection underwent randomization; 99 were assigned to the lopinavir-ritonavir group, and 100 to the standard-care group. Treatment with lopinavir-ritonavir was not associated with a difference from standard care in the time to clinical improvement (hazard ratio for clinical improvement, 1.31; 95% confidence interval [CI], 0.95 to 1.80). Mortality at 28 days was similar in the lopinavir-ritonavir group and the standard-care group (19.2% vs. 25.0%; difference, -5.8 percentage points; 95% CI, -17.3 to 5.7). The percentages of patients with detectable viral RNA at various time points were similar. In a modified intention-to-treat analysis, lopinavir-ritonavir led to a median time to clinical improvement that was shorter by 1 day than that observed with standard care (hazard ratio, 1.39; 95% CI, 1.00 to 1.91). Gastrointestinal adverse events were more common in the lopinavir-ritonavir group, but serious adverse events were more common in the stnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with sev	0
7121492	[O] time to clinical improvement [I] lopinavir-ritonavir (400 mg and 100 mg, respectively) twice a day for 14 days, in addition to standard care [C] standard care	Results: A total of 199 patients with laboratory-confirmed SARS-CoV-2 infection underwent randomization; 99 were assigned to the lopinavir-ritonavir group, and 100 to the standard-care group. Treatment with lopinavir-ritonavir was not associated with a difference from standard care in the time to clinical improvement (hazard ratio for clinical improvement, 1.31; 95% confidence interval [CI], 0.95 to 1.80). Mortality at 28 days was similar in the lopinavir-ritonavir group and the standard-care group (19.2% vs. 25.0%; difference, -5.8 percentage points; 95% CI, -17.3 to 5.7). The percentages of patients with detectable viral RNA at various time points were similar. In a modified intention-to-treat analysis, lopinavir-ritonavir led to a median time to clinical improvement that was shorter by 1 day than that observed with standard care (hazard ratio, 1.39; 95% CI, 1.00 to 1.91). Gastrointestinal adverse events were more common in the lopinavir-ritonavir group, but serious adverse events were more common in the stnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with sev	0

7121492	[O] Mortality [I] lopinavir-ritonavir in addition to standard care [C] standard care	Results: A total of 199 patients with laboratory-confirmed SARS-CoV-2 infection underwent randomization; 99 were assigned to the lopinavir-ritonavir group, and 100 to the standard-care group. Treatment with lopinavir-ritonavir was not associated with a difference from standard care in the time to clinical improvement (hazard ratio for clinical improvement, 1.31; 95% confidence interval [CI], 0.95 to 1.80). Mortality at 28 days was similar in the lopinavir-ritonavir group and the standard-care group (19.2% vs. 25.0%; difference, -5.8 percentage points; 95% CI, -17.3 to 5.7). The percentages of patients with detectable viral RNA at various time points were similar. In a modified intention-to-treat analysis, lopinavir-ritonavir led to a median time to clinical improvement that was shorter by 1 day than that observed with standard care (hazard ratio, 1.39; 95% CI, 1.00 to 1.91). Gastrointestinal adverse events were more common in the lopinavir-ritonavir group, but serious adverse events were more common in the stnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with sev	0
7121492	[O] percentages of patients with detectable viral RNA at various time points [I] lopinavir-ritonavir in addition to standard care [C] standard care	Results: A total of 199 patients with laboratory-confirmed SARS-CoV-2 infection underwent randomization; 99 were assigned to the lopinavir-ritonavir group, and 100 to the standard-care group. Treatment with lopinavir-ritonavir was not associated with a difference from standard care in the time to clinical improvement (hazard ratio for clinical improvement, 1.31; 95% confidence interval [CI], 0.95 to 1.80). Mortality at 28 days was similar in the lopinavir-ritonavir group and the standard-care group (19.2% vs. 25.0%; difference, -5.8 percentage points; 95% CI, -17.3 to 5.7). The percentages of patients with detectable viral RNA at various time points were similar. In a modified intention-to-treat analysis, lopinavir-ritonavir led to a median time to clinical improvement that was shorter by 1 day than that observed with standard care (hazard ratio, 1.39; 95% CI, 1.00 to 1.91). Gastrointestinal adverse events were more common in the lopinavir-ritonavir group, but serious adverse events were more common in the stnt was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with sev	0

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7102549	[O] viral carriage at D6-post inclusion [I] hydroxychloroquine [C] untreated	Results: Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms. Twenty cases were treated in this study and showed a significant reduction of the viral carriage at D6-post inclusion compared to controls, and much lower average carrying duration than reported of untreated patients in the literature. Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination. Conclusion: Despite its small sample size our survey shows that hydroxychloroquine treatment is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.	-1
7102549	[O] viral carriage at D6-post inclusion [I] azithromycin added to hydroxychloroquine [C] untreated	Results: Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms. Twenty cases were treated in this study and showed a significant reduction of the viral carriage at D6-post inclusion compared to controls, and much lower average carrying duration than reported of untreated patients in the literature. Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination. Conclusion: Despite its small sample size our survey shows that hydroxychloroquine treatment is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.	-1

7102549	[O] viral carrying duration [I] azithromycin added to hydroxychloroquine [C] untreated	Results: Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms. Twenty cases were treated in this study and showed a significant reduction of the viral carriage at D6-post inclusion compared to controls, and much lower average carrying duration than reported of untreated patients in the literature. Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination. Conclusion: Despite its small sample size our survey shows that hydroxychloroquine treatment is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.	-1
7102549	[O] viral load disappearance [I] azithromycin added to hydroxychloroquine [C] untreated	Results: Six patients were asymptomatic, 22 had upper respiratory tract infection symptoms and eight had lower respiratory tract infection symptoms. Twenty cases were treated in this study and showed a significant reduction of the viral carriage at D6-post inclusion compared to controls, and much lower average carrying duration than reported of untreated patients in the literature. Azithromycin added to hydroxychloroquine was significantly more efficient for virus elimination. Conclusion: Despite its small sample size our survey shows that hydroxychloroquine treatment is significantly associated with viral load reduction/disappearance in COVID-19 patients and its effect is reinforced by azithromycin.	-1
7270883	[O] time to clinical improvement within 28 days [I] convalescent plasma therapy added to standard treatment [C] standard treatment	Results: Of 103 patients who were randomized (median age, 70 years; 60 [58.3%] male), 101 (98.1%) completed the trial. Clinical improvement occurred within 28 days in 51.9% (27/52) of the convalescent plasma group vs 43.1% (22/51) in the control group (difference, 8.8% [95% CI, -10.4% to 28.0%]; hazard ratio [HR], 1.40 [95% CI, 0.79-2.49]; P = .26). Among those with severe disease, the primary outcome occurred in 91.3% (21/23) of the convalescent plasma group vs 68.2% (15/22) of the control group (HR, 2.15 [95% CI, 1.07-4.32]; P = .03); among those with life-threatening disease the primary outcome occurred in 20.7% (6/29) of the convalescent plasma group vs 24.1% (7/29) of the control group (HR, 0.88 [95% CI, 0.30-2.63]; P = .83) (P for interaction = .17). There was no significant difference in 28-day mortality (15.7% vs 24.0%; OR, 0.65 [95% CI, 0.29-1.46]; P = .30) or time from randomization to discharge (51.0% vs 36.0% discharged by day 28; HR, 1.61 [95% CI, 0.88-2.93]; P = .12). Convalescent plasma treatment was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with severe or life-threatening COVID-19, convalescent plasma therapy added to standard treatment, compared with standard treatment alone, did not result in a statistically significant improvement in time to clinical improvement within 28 days. Interpretation is limited by early termination of the trial, which may have been underpowered to detect a clinically important difference.	0

7270883	[O] 28-day mortality [I] convalescent plasma therapy added to standard treatment [C] standard treatment	Results: Of 103 patients who were randomized (median age, 70 years; 60 [58.3%] male), 101 (98.1%) completed the trial. Clinical improvement occurred within 28 days in 51.9% (27/52) of the convalescent plasma group vs 43.1% (22/51) in the control group (difference, 8.8% [95% CI, -10.4% to 28.0%]; hazard ratio [HR], 1.40 [95% CI, 0.79-2.49]; P = .26). Among those with severe disease, the primary outcome occurred in 91.3% (21/23) of the convalescent plasma group vs 68.2% (15/22) of the control group (HR, 2.15 [95% CI, 1.07-4.32]; P = .03); among those with life-threatening disease the primary outcome occurred in 20.7% (6/29) of the convalescent plasma group vs 24.1% (7/29) of the control group (HR, 0.88 [95% CI, 0.30-2.63]; P = .83) (P for interaction = .17). There was no significant difference in 28-day mortality (15.7% vs 24.0%; OR, 0.65 [95% CI, 0.29-1.46]; P = .30) or time from randomization to discharge (51.0% vs 36.0% discharged by day 28; HR, 1.61 [95% CI, 0.88-2.93]; P = .12). Convalescent plasma treatment was associated with a negative conversion rate of viral PCR at 72 hours in 87.2% of the convalescent plasma group vs 37.5% of the control group (OR, 11.39 [95% CI, 3.91-33.18]; P < .001). Two patients in the convalescent plasma group experienced adverse events within hours after transfusion that improved with supportive care. Conclusion and relevance: Among patients with severe or life-threatening COVID-19, convalescent plasma therapy added to standard treatment, compared with standard treatment alone, did not result in a statistically significant improvement in time to clinical improvement within 28 days. Interpretation is limited by early termination of the trial, which may have been underpowered to detect a clinically important difference.	0
7211500	[O] median time from start of study treatment to negative nasopharyngeal swab [I] combination group [C] lopinavir-ritonavir	Findings: Between Feb 10 and March 20, 2020, 127 patients were recruited; 86 were randomly assigned to the combination group and 41 were assigned to the control group. The median number of days from symptom onset to start of study treatment was 5 days (IQR 3-7). The combination group had a significantly shorter median time from start of study treatment to negative nasopharyngeal swab (7 days [IQR 5-11]) than the control group (12 days [8-15]; hazard ratio 4·37 [95% CI 1·86-10·24], p=0·0010). Adverse events included self-limited nausea and diarrhoea with no difference between the two groups. One patient in the control group discontinued lopinavir-ritonavir because of biochemical hepatitis. No patients died during the study. Interpretation: Early triple antiviral therapy was safe and superior to lopinavir-ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19. Future clinical study of a double antiviral therapy with intent was associated with a negative conversi	-1

7211500	[O] adverse events [I] triple antiviral therapy [C] 14 days of lopinavir 400 mg and ritonavir 100 mg every 12 h	Findings: Between Feb 10 and March 20, 2020, 127 patients were recruited; 86 were randomly assigned to the combination group and 41 were assigned to the control group. The median number of days from symptom onset to start of study treatment was 5 days (IQR 3-7). The combination group had a significantly shorter median time from start of study treatment to negative nasopharyngeal swab (7 days [IQR 5-11]) than the control group (12 days [8-15]; hazard ratio 4·37 [95% CI 1·86-10·24], p=0·0010). Adverse events included self-limited nausea and diarrhoea with no difference between the two groups. One patient in the control group discontinued lopinavir-ritonavir because of biochemical hepatitis. No patients died during the study. Interpretation: Early triple antiviral therapy was safe and superior to lopinavir-ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19. Future clinical study of a double antiviral therapy with intent was associated with a negative conversi	0
7211500	[O] diarrhoea [I] triple antiviral therapy [C] 14 days of lopinavir 400 mg and ritonavir 100 mg every 12 h	Findings: Between Feb 10 and March 20, 2020, 127 patients were recruited; 86 were randomly assigned to the combination group and 41 were assigned to the control group. The median number of days from symptom onset to start of study treatment was 5 days (IQR 3-7). The combination group had a significantly shorter median time from start of study treatment to negative nasopharyngeal swab (7 days [IQR 5-11]) than the control group (12 days [8-15]; hazard ratio 4·37 [95% CI 1·86-10·24], p=0·0010). Adverse events included self-limited nausea and diarrhoea with no difference between the two groups. One patient in the control group discontinued lopinavir-ritonavir because of biochemical hepatitis. No patients died during the study. Interpretation: Early triple antiviral therapy was safe and superior to lopinavir-ritonavir alone in alleviating symptoms and shortening the duration of viral shedding and hospital stay in patients with mild to moderate COVID-19. Future clinical study of a double antiviral therapy with intent was associated with a	0